

The invention claimed is:

1. An intervertebral device comprising:

a plurality of struts, wherein each strut is rotatably associated with adjacent struts to form a modifiable inner volume V for bone graft containment when the intervertebral device is in an expanded state, and whereby the inner volume V is enclosed by the plurality of struts and the inner volume V is substantially zero when the plurality of adjacent struts rotates towards other struts,

wherein each strut of the plurality of struts comprises an anterior surface and a posterior surface configured to contact the vertebral endplates;

wherein each strut comprises a longitudinal body member extending from a first end and a second end of the strut; and

wherein the first end includes a mating hole and the second end includes a protrusion, wherein the mating hole flexes open to receive the protrusion of an adjacent strut to rotatably associate adjacent struts about the first end and second end.

2. The intervertebral device of claim 1, wherein the intervertebral device further comprises a proximal portion and a distal portion, and a longitudinal axis and a transverse axis; and the plurality of struts rotate to expand or contract the modifiable inner volume V generally along at least the longitudinal axis or the transverse axis.

3. The intervertebral device of claim 2, wherein the distal and proximal portions are tapered when the inner volume V is substantially zero for delivery of the intervertebral device.

4. The intervertebral device of claim 1, wherein the plurality of struts further comprises an anterior surface and a posterior surface, wherein at least one of the anterior surface or the posterior surface include a teethed surface.

5. The intervertebral device of claim 1, wherein each strut includes a width W, which extends from an anterior surface to a posterior surface of the strut, and the width W may be selected upon the particular vertebra that needs to resist subsidence or shortening of the intervertebral disc space.

6. The intervertebral device of claim 1, further comprising a locking mechanism configured to lock the intervertebral device in the expanded state.

7. The intervertebral device of claim 6, wherein the locking mechanism is attached between non-adjacent struts at a position between the first and second ends of the non-adjacent struts.

8. The intervertebral device of claim 1, wherein the intervertebral device further comprises a thickness profile configured to approximate the intervertebral space between vertebrae.

9. The intervertebral device of claim 8, wherein the struts have a thickness, and the thickness profile is approximately the sum of the thickness of two adjacent struts.

10. The intervertebral device of claim 1, wherein the anterior surface and the posterior surfaces are transverse to an axis of rotation along which each strut is rotatably associated with adjacent struts.

11. The intervertebral device of claim 1, wherein the intervertebral device is manufactured from a combination of polyetheretherketone and another material.

12. An intervertebral device comprising:

a plurality of rotatably coupled struts having interior faces surrounding an inner volume V, each strut comprising a longitudinal body member extending from a first end and a second end

proximal and distal ends oppositely disposed along a longitudinal axis of the body, wherein the distal and proximal ends are tapered when the inner volume V is substantially zero for delivery of the intervertebral device;

wherein the inner volume V is in a closed state when the plurality of adjacent struts rotates towards the interior faces of the struts, and the inner volume V is in an expanded state when the plurality of adjacent struts rotates away from the interior faces of the struts;

wherein the first end includes a mating hole and the second end includes a protrusion, wherein the mating hole flexes open to receive the protrusion of an adjacent strut to rotatably associate adjacent struts about the first end and second end, and

a locking mechanism configured to lock the intervertebral device in the expanded state, wherein the locking mechanism is attached between non-adjacent struts at a position between the first and second ends of the non-adjacent struts.

13. The intervertebral device of claim 12, wherein each strut includes a width W, which extends from an anterior surface to a posterior surface of the strut, and the width W may be constant or vary depending upon the particular vertebra that needs to resist subsidence or shortening of the intervertebral disc space.

14. The intervertebral device of claim 12, wherein the longitudinal body members of the struts generally run along the longitudinal axis or length of the strut.

15. The intervertebral device of claim 12, wherein the longitudinal body members of the struts are linear.

16. The intervertebral device of claim 12, wherein the intervertebral device is manufactured from a combination of polyetheretherketone and another material.

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